

題目	馬可夫狀態轉換模型與混合分配模型估計風險值之應用-以台灣發行量加權股價指數為例
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摘要	<p>本篇文章採用馬可夫狀態轉換模型、混合常態分配和混合誤差分配模型估算台灣發行量加權股價指數之風險值，並假設報酬分配屬於兩個不同的狀態，進而利用狀態間的轉換，希望能夠有效掌握對於報酬分配高峰、厚尾與偏態的情形，進而對尾端風險值的計算有所助益。實證結果發現，經由向前測試可知，馬可夫模型預測風險的失誤次數只有在信心水準為 99%時優於混合分配模型，但其失誤次數均符合理論失誤次數。若以資金使用效率的角度觀察，發現馬可夫模型在三種不同的信心水準下，其表現皆優於混合模型，本文認為原因在於馬可夫模型採用馬可夫鍊做為狀態轉換的機制，較混合分配所採用的轉換機制能夠考慮資料序列前後期狀態與相關訊息，進而對報酬率分配有較精確的掌握，故使用馬可夫模型做為風險管理的工具為一較佳的選擇。</p>
關鍵字	網際網路、合作學習、超連結、資訊內容呈現方式
Title	Value at Risk with Markov Switching Process and Mixture Distribution The Case of Taiwan Stock Exchange Capitalization Weighted Stock Index
Author(s)	Jui-Cheng Hung, Wan-Hsiu Cheng, Ming-Chih Lee, Ching-Mo Chang
Abstract	<p>This paper investigates the value-at-risk (VaR) of returns on Taiwan weighted stock index using Markov-switching model, mixture normal distribution and mixture error distribution model. We first assume that the distribution of returns is mixed by two distributions, then, use the states-switching method for capturing the kurtosis, fat-tail and skewness of the distribution of returns well. It is also useful to measure the risk by calculating the correct value of the risk. The empirical results show that Markov-switching model can capture the distribution better than mixture distribution model only in 99% confidence level under the forward test. However, viewing from the rate of capital utilization, we find that the performances of Markov-switching model are the best than others under each confidence level. We infer that the Markov-switching model can capture the distribution well resulting from it adopts the transformation mechanism of Markov chain. The Markov chain contains more relative information of time serial data than the mixture distribution model does. Therefore, we suggest that the Markov-switching model is suitable to be an instrument of risk measurement.</p>
Key Words	VaR, Markov Switching Model, Mixture Normal Distribution Model, Mixture Error Distribution Model, Stress Test